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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/529,121	10/11/2005	Johannes Antonius Joseph Jacobs	VOB-38027	1564

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EXAMINER	
GOFF II, JOHN L	

ART UNIT	PAPER NUMBER
1791	

NOTIFICATION DATE	DELIVERY MODE
09/09/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/529,121	JACOBS ET AL.	
	Examiner	Art Unit	
	John L. Goff	1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 August 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *17-19,21-31,33 and 36-40* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *17-19,21-31,33 and 36-40* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *24 March 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 8/24/09 has been entered.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Double Patenting

3. Applicant is advised that should claim 29 be found allowable, claim 30 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Claim Rejections - 35 USC § 102

4. Claims 17-19, 22, 24, 26-31, 33, and 37-40 are rejected under 35 U.S.C. 102(b) as being anticipated by Yamaguchi et al. (WO 00/22334 with U.S. Patent 6,629,547 which claims priority to the WIPO document used as an English translation).

Yamaguchi discloses a method of reinforcing a pipe, i.e. an article that has been shaped in a three dimensional manner, comprising providing a thermoplastic pipe (39 of Figure 17), wrapping the pipe with a tape of a drawn, i.e. stretched, thermoplastic polymer (182 of Figure 17), and applying heat, i.e. a heat treatment, and pressure to attach the tape to the pipe. The pipe is an article that has been shaped in a three-dimensional manner before applying the tape. The tape is shaped into a three-dimensional manner simultaneously with or before forming the reinforced pipe (Figures 1 and 17 and Column 1, lines 6-21 and Column 3, lines 32-55 and Column 4, lines 56-67 and Column 5, lines 1-4 and Column 10, lines 54-65 and Column 17, lines 60-67 and Column 30, lines 43-51).

Regarding claims 18, 19, 22, 33, and 37, the pipe comprises a solid thermoplastic material such as a polyolefin such as polyethylene, and the tape comprises a drawn thermoplastic polyolefin such as polyethylene, i.e. the pipe and tape comprise essentially the same composition.

Regarding claims 24 and 38, the tape is a monoaxially drawn thermoplastic polymer having a stretch ratio of more than 12. The Office is unequipped to specifically test the tape for the E-modulus property. However, because the tape is made of materials consistent with that disclosed by applicants as materials with stretch ratios greater than 12 resulting in an E-modulus

of at least 10 GPa the tape taught by Yamaguchi is considered to have the claimed property absent a specific showing or convincing argument otherwise.

Regarding claims 26-28, 39, and 40, Yamaguchi further teaches after shaping the tape into a shaped material to act as a reinforcing material (182 of Figure 17) applying an insulating polyethylene foam layer (171 of Figure 17) and a protective polyethylene cover/finish layer (41 of Figure 17) to the shaped reinforcing material (Figure 17 and Column 30, lines 43-51).

Regarding claim 31, the reinforced pipe taught by Yamaguchi is at least an article for the building/construction industry.

It is noted claims 29-31 are product-by-process claims. Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. The product taught by Yamaguchi is the same as the product in the product-by-process claim. Once the examiner provides a rationale tending to show that the claimed product appears to be the same or similar to that of the prior art, although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product (See MPEP 2113).

5. Claims 17-19, 21-25, 29-31, 33, and 36-38 are rejected under 35 U.S.C. 102(b) as anticipated by Ferrar et al. (U.S. Patent 5,578,370).

Ferrar teaches a method of forming a solid, thermoplastic reinforcing woven tape consisting of a central layer of propylene (greater than 50 wt. % of the tape) sandwiched between

two layers of propylene copolymer which two layers have a lower melting point (considered DSC melting point) than the central layer including monoaxially drawing the tape having a stretch ratio of more than 12 and having an E-modulus of at least 5 GPa. Ferrar teaches providing a first tape, i.e. an article, and overlaying the first tape with a second tape, i.e. a tape of a drawn thermoplastic polymer, and applying heat, i.e. a heat treatment, and pressure to attach the second tape to a surface of the first tape (Column 2, lines 39-61 and Column 3, lines 13-19 and Examples 4 and 6).

It is noted the claims require a "method for reinforcing an article in a three-dimensional shape". The claims further require "i) "said article has been shaped in a three-dimensional manner before applying the tape, film or yarn; or ii) said tape, film or yarn has been shaped in a three-dimensional manner simultaneously with or before forming the reinforced article". It appears because steps i) and ii) are required in the alternative that the method for reinforcing an article in a three-dimensional shape occurs by either of shaping the article into a three-dimensional shape before applying the tape OR shaping the tape in a three-dimensional manner simultaneously with or before forming the reinforced article. Ferrar teaches the tapes are attached in a mould or former wherein following cooling the attached tapes assume a predetermined three-dimensional shape (Column 3, lines 10-12). Thus at a minimum Ferrar at least teaches step ii) wherein the tape has been shaped in a three-dimensional manner simultaneously with or before forming the reinforced article, and because Ferrar teaches step ii) Ferrar teaches a method for reinforcing an article in a three-dimensional manner as claimed. Regarding claims 24 and 38, Ferrar is considered to teach monoaxially drawing the tape as there is no specific teaching of drawing the tape in more than one direction. Ferrar teaches stretching

the tape to increase its strength. Ferrar teaches as exemplary a stretch ratio of 20 resulting in an E-modulus of at least 5 GPa. The Office is unequipped to specifically test the tape for the E-modulus property. However, because the tape is made of materials consistent with that disclosed by applicants as materials with stretch ratios greater than 12 resulting in an E-modulus of at least 10 GPa the tape taught by Ferrar is considered to have the claimed property absent a specific showing or convincing argument otherwise.

Regarding claim 31, the reinforced article taught by Ferrar is at least an article for ballistic purposes.

It is noted claims 29-31 are product-by-process claims. Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. The product taught by Ferrar is the same as the product in the product-by-process claim. Once the examiner provides a rationale tending to show that the claimed product appears to be the same or similar to that of the prior art, although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product (See MPEP 2113).

Claim Rejections - 35 USC § 103

6. Claim 38 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ferrar.

Ferrar is considered to teach the claimed stretch ratio and E-modulus as set forth above. However, the stretch ratio and E-modulus are merely exemplary, and in the event it is shown Ferrar does not necessarily teach the E-modulus the following rejection would apply. It would have been obvious to one of ordinary skill in the art at the time the invention was made to stretch the tape as taught by Ferrar to ratios of greater than 20 thereby further increasing the E-modulus to at least 10 GPa as only the expected results of further increasing the strength of the tape would be achieved.

7. Claims 17-19, 21-25, 29-31, 33, and 36-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hauber (U.S. Patent Application Publication 2002/0054968) in view of Ferrar.

Hauber discloses a method of reinforcing a pipe, i.e. an article that has been shaped in a three dimensional manner, comprising providing a thermoplastic polypropylene pipe (14 of Figure 1), wrapping the pipe with a preformed reinforcement tape of a polymer (26 of Figure 1), and applying heat, i.e. a heat treatment, and pressure to attach the tape to the pipe. The pipe is an article that has been shaped in a three-dimensional manner before applying the tape. The tape is shaped into a three-dimensional manner simultaneously with or before forming the reinforced pipe (Figure 1 and Paragraphs 0001, 0011, 0012, and 0018). Hauber is silent as to the tape comprising a drawn thermoplastic polymer. However, Hauber does teach polymer of the tape must have a softening point less than that of the polymer of the thermoplastic pipe. Ferrar teaches a tape having good mechanical strength for reinforcing articles comprising a solid, thermoplastic woven tape consisting of a central layer of propylene (greater than 50 wt. % of the

tape) sandwiched between two layers of propylene copolymer which two layers have a lower melting point (considered DSC melting point) than the central layer including monoaxially drawing the tape having a stretch ratio of more than 12 and having an E-modulus of at least 5 GPa. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use as the preformed reinforcement tape of Hauber the tape taught by Ferrar a known reinforcement tape with good mechanical strength having surface layers which soften at a temperature lower than polypropylene, i.e. the polymer of the thermoplastic pipe taught by Hauber. Alternatively, Ferrar teaches the tape is a reinforcement for use in general engineering applications including wherein the tape is wound (Column 8, lines 4-8). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the tape as taught by Ferrar to reinforce a thermoplastic polypropylene pipe wherein the tape is wound around the pipe and attached to the pipe using heat and pressure as shown by Hauber as Ferrar specifically teaches the tape is reinforcement for general engineering applications without requiring any particular type of application.

Regarding claims 18, 19, 22, 33, and 37, the pipe comprises a solid thermoplastic material such as a polypropylene, and the tape comprises a drawn thermoplastic polypropylene, i.e. the pipe and tape comprise essentially the same composition.

Regarding claims 24 and 38, Ferrar is considered to teach monoaxially drawing the tape as there is no specific teaching of drawing the tape in more than one direction. Ferrar teaches stretching the tape to increase its strength. Ferrar teaches as exemplary a stretch ratio of 20 resulting in an E-modulus of at least 5 GPa. The Office is unequipped to specifically test the tape for the E-modulus property. However, because the tape is made of materials consistent with

that disclosed by applicants as materials with stretch ratios greater than 12 resulting in an E-modulus of at least 10 GPa the tape taught by Ferrar is considered to have the claimed property absent a specific showing or convincing argument otherwise. However, the stretch ratio and E-modulus are merely exemplary, and in the event it is shown Ferrar does not necessarily teach the E-modulus the following rejection would apply. It would have been obvious to one of ordinary skill in the art at the time the invention was made to stretch the tape as taught by Hauber as modified by Ferrar or Ferrar as modified by Hauber to ratios of greater than 20 thereby further increasing the E-modulus to at least 10 GPa as only the expected results of further increasing the strength of the tape would be achieved.

Regarding claim 31, the reinforced pipe taught by Hauber as modified by Ferrar or Ferrar as modified by Hauber is at least an article for the building/construction industry.

It is noted claims 29-31 are product-by-process claims. Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. The product taught by Ferrar is the same as the product in the product-by-process claim. Once the examiner provides a rationale tending to show that the claimed product appears to be the same or similar to that of the prior art, although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product (See MPEP 2113).

8. Claims 26-28, 39, and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hauber and Ferrar as applied to claims 17-19, 21-25, 29-31, 33, and 36-38 above, and further in view of Yamaguchi.

Hauber and Ferrar as applied above teaches all of the limitations in claims 26-28, 39, and 40 except for a specific teach of including a foam layer and a covering layer. Yamaguchi as more fully described above discloses a method of forming a reinforced pipe similar to the that of Hauber including a teaching of after shaping the tape into a shaped material to act as a reinforcing material (182 of Figure 17) applying an insulating polyethylene foam layer (171 of Figure 17) and a protective polyethylene cover/finish layer (41 of Figure 17) to the shaped reinforcing material (Figure 17 and Column 30, lines 43-51). It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply to the shaped tape reinforcing material taught by Hauber as modified by Ferrar or Ferrar as modified by Hauber a polyethylene foam layer and a polyethylene cover/finish layer as shown by Yamaguchi to insulate and protect the pipe.

Response to Arguments

9. Applicant's arguments with respect to claims 17-19, 21-31, 33, and 36-40 have been considered but are moot in view of the new ground(s) of rejection.

The new limitations are fully addressed above. It is noted the limitations of "a three-dimensional manner" and "three-dimensionally shaped" are interpreted as requiring a non-flat shape (See applicants specification page 2, lines 21-24).

Applicants argue, "A first difference between the method of claim 17 and Ferrar et al. (US 5,578,330) is that amended claim 17 recites that a tape, film or yarn is attached to at least one three-dimensionally shaped surface of the article. The mutually intersecting tapes in the mat of Ferrar et al. do not have a three-dimensionally shaped surface prior to the fusing with another tape. A mat with a three-dimensional form may only be obtained after a heating procedure in a mold or former (column 3, lines 10-12). Thus, Ferrar et al. does not disclose a shaped three-dimensional article as claimed.".

The claims do not require the tape is shaped three-dimensionally prior to fusing as steps i) and ii) of claim 1 are required in the alternative such that step i), i.e. shaping the article before applying the tape, is not expressly required by the claim.

Applicants further argue, "A second difference follows from the feature of claim 17 that the claimed tape, film or yarn is attached to a three-dimensionally shaped surface of the article. This is conceptually different from Ferrar et al., because there it is described that the surface layer of a first tape is fused together with the surface layer of a second tape of the same kind, wherein the tapes belong either to the same mat (column 3 lines 5-9) or to different mats (column 3 line 14). It appears that the Examiner considers that the first tape is the "article" of claim 17, and the second tape is the "tape" of claim 17 (page 3, lines 1 and 2 of the Office action). Ferrar et al. describes a method for preparing a mat by fusing together mutually intersecting elongate elements of a composite material (column 3, lines 4-5), and that it does not describe a method for reinforcing an article by treating its (three-dimensional) surface, as in the method of claim 17.".

Applicants interpretation of the Examiner position that the first tape is the "article" and the second tape is "tape" is correct it being further noted Ferrar teaches the tapes are attached to

each other in a multilayer (Column 3, lines 10-19 and Column 5, lines 15-22 and Column 7, lines 24-28). It is unclear why this interpretation does not meet the claim language, and applicants argument does not specifically point to any differences between this interpretation and the claim language it being noted the claims do not require that the attached article and tape form any type of distinguishing intersection.

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **John L. Goff** whose telephone number is **(571)272-1216**. The examiner can normally be reached on M-F (7:15 AM - 3:45 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/John L. Goff/
Primary Examiner, Art Unit 1791